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Telephony

AN INTERTEC PUBLICATION JAN. 23, 1989 INTEGRATING VOICE & DATA COMMUNICATIONS $3

EUROPEAN ISDN: PROBLEMS, PROMISES Once uniformly scorned in Europe, ISDN is now getting some respect

AT&T KICKS OFF NEW SALES STRATEGY
New VP Nacchio pledges creativity, aggressiveness

AT&T ON THE BRINK OF ITALTEL DEAL
Press leaks delay expected announcement

MONDAY, JANUARY 23, 1989 Volume 216, No. 4

Telephony

INTEGRATING VOICE & DATA COMMUNICATIONS

Once dismissed by European users as a confidence trick devised by manufacturers and PTTs, the integrated services digital network now looks like a legitimate part of Europe's map. Cover art by Laura M. Doyle

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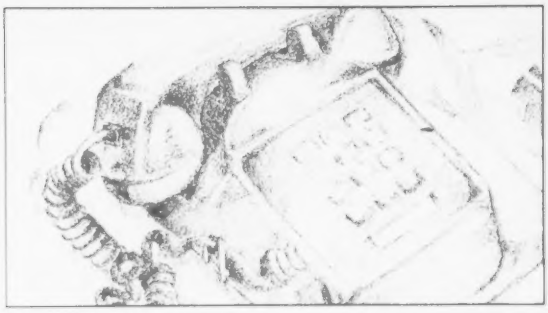
Talked to any nice machines lately?



Vendors and telecom analysts predict good times for the voice response industry

MICHAEL WARR, Technical Editor

Voice response is one of the most ambitious members of the voice processing family.

Its reach extends to every industry and into government offices and universities as a plethora of applications are imagined and deployed.

Voice response allows users who have digital phones to interact with databases without operator assistance. This saves time and money compared to the normal approach, where users call an operator who accesses a CRT screen and reads the information.

Enthusiasm over voice response technology, combined with U.S. District Judge Harold Greene's decision last March to let the Bell operating companies offer audiotex services, made such an impression that Yankee Group changed its market forecast.

The revised forecast predicts a growth rate in the voice response market of between 35% and 45% per year until 1992.

Yankee Group is not alone in its optimism. Revenues from pay-per-call information services are expected to rise from $443 million in 1988 to $750 million by 1992, indicating a corresponding growth in voice response systems, says Steve Reynolds, research analyst at Link Resources (Table 1).

Most pay-per-call services, such

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TABLE 1 1989 FORECAST OF INTERACTIVE VOICE SERVICE REVENUES
(Dollars in millions)

	1986	1987	1988	1989	1990	1991	1992	CAGR*
Intelligent 800 service revenues	120.0	168.0	231.0	304.9	391.3	491.9	608.8	31
Pay-per-call								
Local (976/970/540)	292.6	316.5	322.8	329.3	325.0	315.0	300.0	0
National (900/700)	35.0	60.0	120.0	110.0	200.0	300.0	450.0	53
Pay-per-call revenues	327.6	376.5	442.8	439.3	525.0	615.0	750.0	14
Voice gateway services								
Talking Yellow Pages								
Operator-assisted services	25.0	30.0	35.0	36.8	38.6	40.5	42.5	9
Talking phone books								
Front of book	0.0	5.0	17.0	30.6	55.1	99.1	148.7	97
Back of book	20.0	40.0	65.0	84.5	126.8	164.8	214.2	49
Subtotal talking phone book	20.0	45.0	82.0	115.1	181.8	263.9	362.9	62
Talking Yellow Pages revenues	45.0	75.0	117.0	151.9	220.4	304.4	405.5	44
Ad supported	5.0	10.0	20.0	40.0	60.0	90.0	135.0	73
Classified ads	0.0	0.0	0.0	1.0	10.0	25.0	50.0	NA
Voice gateway revenues	50.0	85.0	137.0	192.9	290.4	419.4	590.5	51
Voice messaging services								
Service bureaus	58.5	90.0	125.0	150.0	180.0	216.0	259.2	28
Telco/residential	0	0	2.5	25.0	181.4	239.3	300.9	129
Telco/small business	0	0	2.5	15.0	88.8	113.3	140.1	111
Total telco revenues	0.0	0.0	5.0	40.0	270.1	352.6	441.0	123
Voice messaging revenues	58.5	90.0	130.0	190.0	450.1	568.6	700.2	51
Total revenues	556.1	719.5	940.8	1127.1	1656.8	2095.0	2649.4	30

*Compounded annual growth rate for telco voice messaging is for 1989-92 only.

Source: Link Resources Corp., November 1988

as weather and entertainment, are accessed via a 900 number. But even 800-based services, which are free, generated $300 million last year—thanks to equipment purchases by the carriers.

Adding to the rising sales of voice response services is the falling entry cost of voice response systems. A system that cost $100,000 nine years ago only costs $30,000 today, according to S. Thomas Emerson, president and chief executive officer of Syntellect Inc.

The most dramatic drop in system prices occurred during the last two years, says Lisa French, an industry analyst at Dataquest. This is largely because of the development of circuit cards that allow operators to run voice response on PCs rather than minicomputers.

The declining cost of chip technology is widening startup opportunities in the industry, notes Reynolds. He says that, with a minor capital outlay, nascent information providers buy a couple of PCs, add voice response circuit boards and offer local network services.

In the business world, the appeal of voice response technology is based, like many other technologies, on the pursuit of lower costs, increased revenues and customer demand.

"Voice response can offer immediate return on money and revenues and increase customer support and services. It is becoming more and more popular," says Dataquest's French.

Multitude of Applications

Triggering the growth of the market are a multitude of applications, French continues.

She notes that billing and account inquiry are common applications. Users can check their bank accounts by phone and even transfer funds. They can access stock quotations 24 hours a day and place investment transactions. With order inquiry, users can pinpoint an order's location and delivery date. And all of these applications are performed without an operator.

French envisions other applications. On university campuses students could enter an account number over the phone and register for classes. They could also check the status of their financial aid, the number of credits needed to graduate and even retrieve messages describing courses.

In the vanguard of voice response applications are the banking and financial, real estate, travel and transit industries. Government applications also are on the rise, say analysts.

Customized Voice

As more diverse industries opt for voice response technology, applications are becoming more customized because users are demanding specialized software.

"For banks there are plenty of software packages," says Reynolds. "The application has been run before, you plug it in and it works."

What about the trucking company with five units spread out across the country that needs a highly customized system?

The need of programmers to develop such customized applications has plagued the voice response industry because only the manufacturer could do the programming. Thus, there is a trend toward menu-driven, user-friendly systems that offer easy modification of applications.

Other trends include more activity by computer vendors. Digital Equipment Corp. already is involved, as are Wang, AT&T and Northern Telecom. Hewlett-Packard and Apple also are developing voice response products, according to French.

Syntellect's Emerson expects to see significant integration of voice messaging and voice response technology. But this, he says, will require a lot of software work.

In addition, Emerson forecasts a continued downward slope in the cost curve and a more aggressive adoption of voice response technology by insurance companies, brokerage houses and financial institutions.

Emerson expects "major telco participation" in voice response services in the next five years, based on pilot installations by Illinois Bell, Bell Atlantic and Southwestern Bell.

"Their entry can only be positive for us," says Emerson. ■

Two Voices

In the voice response world you can have your messages two ways: digitized or synthesized.

Digitized speech is a recording of words and phrases stored in digital form. It is different from synthesized speech, which is text translated into voice and often sounds like the robot in the 1960s science fiction serial, *Lost in Space*. Not surprisingly, users are more comfortable with digitized speech because it sounds more human.

Unfortunately, digitized speech has a limited vocabulary. Although it is acceptable for audiotex, which involves stored messages and predictable vocabularies, it cannot be used to access databases and computer-resident information. Synthesized speech, on the other hand, has an unlimited vocabulary. Vendors and analysts agree that both digitized and synthesized speech are valuable, depending upon the specific application. The wave of the future in voice response systems is toward a combination of both technologies.

Meanwhile, the engineers are working on synthesized speech that sounds as human as Hal the computer did in the movie, *Space Odyssey 2001*.